

Exploring Competitive Dynamics, Technological Innovations, and Sustainable Strategies for X Plant-Based Meat Health Technology Co., Ltd.

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Abstract: The research objectives were as follows: 1) to analyze the competitive environment of X Plant-Based Meat Health Technology Co., Ltd.; 2) to determine the technologies and innovation capabilities of X Plant-Based Meat Health Technology Co., Ltd.; and 3) to formulate sustainable strategies for X Plant-Based Meat Health Technology Co., Ltd. This research adopted qualitative research and document study. Twelve key informants, including top-level management, product development teams, head of marketing departments, and consumer groups within the company, were involved. The data analyzed the current market competition status of X Plant-Based Meat Health Technology Co., Ltd. using PEST, Porter's Five Forces, and SWOT models, thus proposing sustainable development strategies. The research findings revealed that: 1) X Plant-Based Meat Health Technology Co., Ltd. operated in a competitive market driven by government initiatives and increasing environmental awareness. Challenges included intensified competition and price sensitivity. However, the company had opportunities for growth in China's expanding plant-based food sector. Success depended on strategic differentiation, technological innovation, and adaptability to evolving market trends amidst competition from diverse players; 2) X Plant-Based Meat Health Technology Co., Ltd. excelled in technology and innovation, operating eight cutting-edge soybean processing facilities and maintaining extensive non-GMO soybean fields. With over 250 patents, it was a global leader, prioritizing environmental sustainability and quality control. Its integrated supply chain, diverse product portfolio, and strategic partnerships contributed to its ongoing success and growth; and 3) X Plant-Based Meat Health Technology Co., Ltd. pursued a comprehensive strategy for sustainable growth in a competitive market. Key elements included niche market penetration, organizational excellence, channel expansion, production capacity enhancement, technical expertise development, and market protection through innovation. These strategies aimed to position the company for long-term success in the plant-based food industry.

Keywords: Competitive Dynamics, Technological Innovations, Sustainable Strategies.

1. Introduction

In recent years, the meat industry market in China has exhibited a continuous expansion trend. Between 1980 and 2019, meat production in China witnessed a significant surge from 12.05 million tons to 76.49 million tons, reflecting a compound annual growth rate of 4.9%. During the 'Ninth Five-Year' period, China's meat production underwent a noticeable transformation from a supply shortage to a buyer's market. The industry saw the emergence of approximately 2,800 meat production companies, including over 200 large to medium-sized companies, with a total cold storage capacity exceeding 4 million tons. As illustrated in Figure 1, the improvement in people's living standards has fueled the prosperity of the meat product market, leading to a sustained increase in meat demand. Notably, since the late 1980s, when economic reform and opening-up accelerated, numerous meat processing plants specializing in sausages experienced rapid growth. Private companies, such as Jinluo in Shandong and Yurun in Nanjing, swiftly emerged as industry leaders. The provinces with the highest number of meat production companies include Jiangsu, Shandong, Zhejiang, Guangdong, and Beijing. Since the early 21st century, China's production and sales of meat and meat products have maintained robust development momentum (Cheng Jingyue, Zhang Baoxian, 2019).

However, the rapid growth of the global population and the escalating demand for meat have brought environmental pressure and highlighted animal welfare issues associated

with traditional livestock farming. Consequently, there is a growing need for a more environmentally friendly and sustainable alternative to traditional meat. The emergence and development of plant-based meat represent a crucial innovation in the global food industry. Plant-based meat, made from plant ingredients that mimic the appearance, texture, and nutritional value of traditional meat without the need for animal sacrifice, gained prominence when a US-based startup called Beyond Meat introduced a successful product in 2013. Subsequently, well-known brands like Impossible Foods, JUST, and Lightlife joined the production and research and development of plant-based meat. Through continuous technological innovation and research efforts, these companies have successfully created plant-based meat products comparable to, or even superior to, traditional meat. According to market research firm Grand View Research, the global plant-based meat market is projected to reach \$20 billion by 2027, with a compound annual growth rate exceeding 40% in the coming years (Wang Yiming, 2020).

As one of the world's largest meat consumers, China has become a significant player in the plant-based meat market. According to data from domestic market research firm iiMedia Research, plant-based meat sales in China reached 350 million yuan in 2019, projected to exceed 1 billion yuan by 2023. The plant-based meat market in China demonstrates tremendous potential and growth prospects. In 2019, nine ministries and commissions, including the National Development and Reform Commission and the Ministry of Agriculture and Rural Affairs, issued the 'Action Plan for the

Development of the Edible Plant-Based Meat Industry.' This plan aims to achieve a plant-based meat industry scale of nearly 10 billion yuan by 2023 and gradually form a globally competitive industry system.

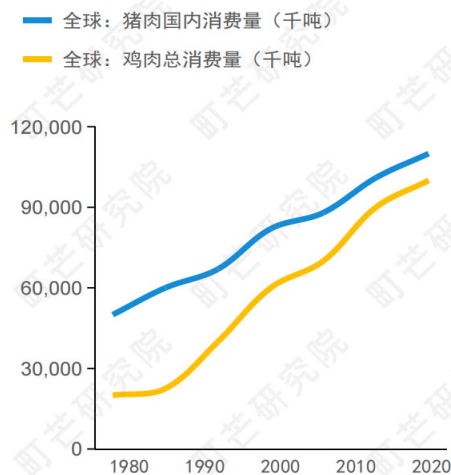


Figure 1. Global demand for meat continues to grow

Source: China Report Hall, forward-looking industry research institute

Against this backdrop, X Plant Meat Health Technology Co., Ltd., founded in 2015 with its headquarters in Hangzhou City, focuses on plant protein research and brand development. The company is committed to providing high-quality and nutritionally rich plant-based meat alternatives, offering consumers a healthy and environmentally friendly food choice. Its core products, including New Vegan Plant Meat in various forms such as chunks, slices, and sausages, have been developed using premium plant ingredients and advanced production techniques to match traditional meat not only in taste but also in nutritional value. As of the end of 2022, the company has established an extensive terminal sales network nationwide and initiated global market expansion. However, influenced by economic globalization, the plant-based meat industry faces increasingly intense competition, presenting both opportunities and threats to X Plant Meat Health Technology Co., Ltd. In addressing these challenges, it becomes crucial to identify and bridge existing knowledge gaps through strategic management theories and methods. This exploration will help comprehend the development environment and operational issues of the case company, paving the way to identify sustainable evolution paths for the future. Accordingly, the study aims to formulate the most suitable development strategy for X Plant Meat Health Technology Co., Ltd. (Wu Jiazhang, 2021).

2. Content

1 Research Design

Literature Review Method: Extensive literature search and review will be conducted to gain a comprehensive understanding of the research topic. The focus will be on summarizing relevant practices and theories, both domestically and internationally, to establish a solid foundation for strategic formulation in this article.

Case Analysis Method: X Plant-Based Meat Health Technology Co., Ltd. will be taken as a case study to analyze its strategic management practices. Relevant

recommendations will be proposed based on the analysis of the company's actual situation in strategic management.

Interviews Method: Interviews will be conducted to examine the actual needs and satisfaction levels of customers towards X Plant-Based Meat Health Technology Co., Ltd. This will contribute to and facilitate the development of the final strategic plan for the company.

2 Data collection

X Plant-Based Meat Health Technology Co., Ltd. is a company specializing in the research and production of plant-based meat products. In order to formulate effective development strategies, data collection is a crucial step.

Firstly, the company collects market data to understand the overall trends and market size of the plant-based meat industry. This includes relevant reports, industry analysis, and market research data. By analyzing market data, the company can determine its competitive advantages and opportunities in the plant-based meat industry.

Secondly, the company conducts consumer research to understand the demand and preferences for plant-based meat products. This can be done through online surveys, focus group discussions, or face-to-face interviews. By understanding consumers' needs, the company can adjust its product development and marketing strategies to meet market demand.

Additionally, the company collects scientific research data and technical information related to plant-based meat products. This includes information on the nutritional value, production techniques, and raw material supply chain of plant-based meat. Through in-depth research and understanding of the scientific background of plant-based meat, the company can optimize product formulations and production processes to improve product quality and competitiveness.

Lastly, the company gathers data and information on competitors to understand their products, market share, and marketing strategies. This can be achieved by reviewing relevant reports and analyzing competitors' product lines and market performance. By understanding competitors, the company can formulate differentiated development strategies to gain a favorable position in the market.

3 PEST Analysis

(1) Political Environment Analysis

The government has initiated measures to promote the development of the soybean industry. Soybeans, as a crucial source of plant-based protein and healthy edible oil, have witnessed a sharp increase in demand due to the upgrading of consumer habits (Lu, 2020). This has led to a growing gap between domestic production and demand. In order to better implement the nation's food security strategy, effectively respond to the complex international trade situation, and promote the revival and growth of the domestic soybean industry while enhancing self-sufficiency in soybeans, the Ministry of Agriculture has been implementing a soybean industry revitalization strategy since 2019. On March 15, 2019, they released the "Implementation Plan for Soybean Revitalization," as soybeans and soybean protein are crucial raw materials for manufacturing plant-based foods.

(2) Economic Environment Analysis

As international food industry giants have largely completed their initial development in their home markets, they have begun to expand into the plant-based food sector in China. This has led to increasing competition both domestically and internationally in this market. For instance,

in June 2020, the American agricultural processing giant Cargill announced on its official website that, after joint experiments with KFC, it launched plant-based meat products under the "PlantEver" brand and began production in Changzhou, China. Following this, on July 13, 2021, Australian plant-based meat pioneer V2 Food declared its entry into the Chinese market. Concurrently, Nestlé began supplying its "Jia Zhi Huo" series of plant-based foods to 90 domestic companies from its factory in Tianjin on July 14, 2021. Globally renowned plant-based meat company Beyond Meat also commenced full-scale commercial production at its factory in Jiaxing, China, and started selling its products on JD.com on July 15. Domestic companies like the Dali Food Group have introduced Beanbean plant-based milk, while Mengniu and WhiteWave Foods' joint venture, Zhi Bu Fang, introduced SIK American-style soy milk. Yili also launched its Zhi Xuan plant-based milk. Traditional meat brands such as Shuanghui, Jinluo, and Jinzi Ham have also entered the plant-based meat sector. Innovative companies like Starfield Zero and HEY Maet have also introduced their own unique plant-based products.

(3) Social-Cultural Environment Analysis

The growing environmental awareness and concern for animal welfare among the public have led to increased consumption of plant-based foods. People are increasingly aware that the production of plant-based foods results in reduced carbon emissions compared to traditional animal-derived foods. They are also free from antibiotics used in animal farming and contribute to a reduced reliance on animal exploitation. This awareness has driven more and more consumers to incorporate plant-based foods into their daily diets.

(4) Technological Environment Analysis

To maintain a leading position in the market, companies must increase their investment in technology research and development. Currently, existing food processing technologies allow companies to produce plant-based alternatives that compete with traditional meat in terms of appearance, taste, and texture. However, due to the widespread advancement of technology, product differentiation among different brands is decreasing, leading to increased issues of product homogeneity. To sustain the uniqueness and leading position of their products in the competitive market, companies must possess strong capabilities in technological innovation and research and development.

3. Formulate sustainable strategies for X Plant-Based Meat Health Technology Co., Ltd.

(1) SWOT Analysis of Company X

A SWOT analysis is utilized to comprehensively summarize the key internal and external factors influencing Company X. This analysis helps identify the company's strengths, weaknesses, opportunities, and threats, allowing for a clear understanding of its strategic position and the formulation of appropriate business strategies.

SO Strategy:

This strategy leverages the company's existing strengths and capabilities while avoiding the risks associated with directly entering the consumer market for end products. The company can further expand into the plant-based food sector without alienating its current soy protein customers.

WO Strategy:

Although the market for plant-based food end products offers opportunities, substantial investments in capital and manpower would be required due to the company's existing resource and capability limitations. However, the success and returns on investment remain uncertain.

ST Strategy:

If the company decides to rapidly enter the plant-based food end product market, it may face strong competition from established competitors and potential resistance from existing soy protein customers. This challenge could impede market performance and increase the difficulty of market competition.

WT Strategy:

This strategy would require the company to invest heavily in an unfamiliar field, facing strong competition and market uncertainty, posing significant risks (Mai, 2021).

In summary, the SO strategy allows the company to maximize its strengths while mitigating potential risks. The company can make a minimal initial investment to test the waters in the plant-based food market and assess market responses before deciding on further involvement. This approach maintains flexibility and stability for the company.

4. Choice of X Company's Market Competition Strategy

(1) Overall Strategy Analysis of X Company

1) Mission and Vision

X Company's mission is to lead the transformation, making "natural, non-GMO Chinese soybeans" a symbol of human safety, trustworthiness, and a healthy lifestyle. X Company is committed to popularizing "natural, non-GMO Chinese soybeans" in every household worldwide, by providing safe, trustworthy, and healthy living through food products made from soybeans. The plant-based food market, especially those centered around "non-GMO" soybean protein, provides a broader path for X Company to realize this mission, bringing the vision closer to reality.

2) Core Values

X Company adheres to the core values of "sincerity and truthfulness," encouraging employees to pursue authenticity and integrity in both personal conduct and business practices. This means gaining a deep understanding of the objective laws of things, following these laws, and applying scientific methods and tools while respecting these laws. Currently, consumers are increasingly concerned about their own health, environmental protection, and animal welfare, aligning with the growth of the plant-based food market and the company's core values.

3) Development Strategy

Since its inception, X Company has centered around soybeans and adopted a vertically integrated development strategy. Initially focusing on soybean primary processing, the company gradually relied on upstream suppliers, expanding into soybean cultivation. Subsequently, X Company expanded into soybean deep processing, particularly in the soybean protein industry, to address market competition and pricing pressures. The plant-based food market is an extension downstream for X Company within the soybean protein industry, aligning with its consistent vertical integration development strategy.

(2) Feasibility Analysis of X Company's Market Competition Strategy

1) Feasibility Analysis as a Market Leader

Market leaders typically refer to enterprises or market organizations that hold the largest share in a specific product or service market. They often play a dominant role in influencing price changes, introducing new products, expanding distribution networks, and increasing promotional efforts. To maintain a competitive advantage, these leaders usually employ a series of strategies, including expanding the overall market demand, maintaining existing market share, or even increasing market share.

Currently, X Company's plant-based food end products are only undergoing small-scale trial sales in the market, primarily to test the market's acceptance of such products. Therefore, the company's market share in the plant-based food end product market can be negligible, and it has not established a dominant position. Furthermore, the resources and capabilities currently possessed by the company cannot support it in gaining the largest market share in the short term in the plant-based food end product market. In contrast, X Company's main product, which is also one of the cash cows, soybean protein, has a complete upstream industry chain and holds a 36% market share. Moreover, it possesses unique product characteristics, making it a market leader in the plant protein industry. Soybean protein, as the primary raw material source for plant-based foods, can provide a stable supply of raw materials for the company to enter the plant-based food sector. However, in the plant-based food industry end product market, the company does not yet have the necessary capabilities and resources to become a market leader.

2) Feasibility Analysis as a Market Follower

Market followers usually operate in secondary market positions, seeking maximum profits in relatively peaceful competitive environments. This strategy is very common in capital-intensive industries with homogeneous products, such as steel, crude oil, and chemicals.

3) Feasibility Analysis as a Market Challenger

Market challengers typically refer to enterprises actively seeking to expand their market share, taking proactive actions to compete with industry leaders or other competitors, whether they are large or small companies, as long as they actively attack other companies to increase market share. X Company lacks the necessary resources and capabilities to actively challenge industry leaders or other competitors to expand market share. Considering that plant-based food is a potentially huge market within the soybean protein application sector, and X Company's existing customers may include plant-based food producers, adopting a market challenger strategy may lead to dissatisfaction and attrition among existing customers in the plant-based food sector. It may even cause concerns among other customers in the soybean protein application sector. Therefore, X Company is not suitable to adopt a market challenger strategy at this time without proper preparation and ensuring sufficient competitiveness, to avoid unnecessary risks to its market position and customer relationships. In the future, if X Company is ready to enter the plant-based food sector and possesses adequate resources and competitiveness, then considering a challenger strategy may be more appropriate.

4) Feasibility Analysis as a Niche Market Player

An ideal niche market possesses the following characteristics:

① It has a certain size and purchasing power to be profitable. With the continuous growth of the plant-based food market, more and more companies are entering the industry, but the current market primarily focuses on the

production and sale of end products, with no companies specializing in upstream raw material supply and formulation provision (Stombelli, 2020). This creates an opportunity for the development of plant-based food premixes, especially for small and medium-sized enterprises that can utilize existing resources and advantages for product processing and sales.

② It has growth potential. As the plant-based food market rapidly expands, the demand keeps increasing, especially for plant-based food premixes. This market sector is full of potential and can attract more small and medium-sized enterprises, especially those capable of providing raw materials and formulation support.

5. Conclusion

(1) Competitive environment of X Plant-Based Meat Health Technology Co., Ltd.

X Plant-Based Meat Health Technology Co., Ltd. operates in a dynamic competitive environment characterized by various external factors. The company, with its extensive soybean industry chain and diverse product portfolio, faces both opportunities and challenges in the plant-based food sector.

In terms of the political environment, government initiatives to promote the soybean industry offer growth opportunities. Additionally, standardized regulations for plant-based foods provide a framework for market development. However, intensified competition from international food giants entering the Chinese market poses a threat, although it also signifies the market's growth potential.

Socially and culturally, increasing environmental awareness and a growing vegetarian population drive demand for plant-based foods. Traditional Chinese cuisine's history of meat-mimicking products facilitates consumer acceptance. Nonetheless, price sensitivity and preferences for familiar tastes remain challenges.

Economically, the rapid growth of China's plant-based market offers significant opportunities for expansion. However, competition from both domestic and international players requires strategic differentiation to maintain market leadership.

Technologically, investments in research and development are crucial to sustaining competitiveness. While technological advancements enable product innovation, companies must address challenges such as product homogeneity and logistical constraints.

(2) Technologies and innovation capabilities of X Plant-Based Meat Health Technology Co., Ltd.

X Plant-Based Meat Health Technology Co., Ltd., excels in technologies and innovation capabilities across its operations. The company operates eight sophisticated soybean and soybean-derived product processing facilities, each supported by cutting-edge research and development centers. Additionally, it maintains extensive non-genetically modified soybean cultivation fields to ensure a stable raw material supply. The company's capacity includes the processing of significant quantities of soybeans annually, producing soybean and pea proteins of high quality. Moreover, it holds a prominent position in the global market, owing to its emphasis on research and development, evident in its possession of over 250 technical patents. Environmental responsibility is a key focus, with strict adherence to national environmental standards in its operations, ensuring uninterrupted production and supply to customers. The

company's commitment to ecological sustainability has earned it recognition as a provincial-level ecological circular agriculture demonstration enterprise. Furthermore, it has implemented advanced quality control systems to monitor product quality throughout its lifecycle, maintaining industry-leading standards and certifications.

With a comprehensive supply chain established over four decades, X Plant-Based Meat Health Technology Co., Ltd., has successfully integrated breeding, cultivation, and processing stages, facilitating efficient collaboration to meet diverse customer demands. The company's product portfolio encompasses a range of soybean-based and plant-based snack products, strategically positioned to address market dynamics. Its workforce, comprising over 1,000 employees with diverse educational backgrounds, undergoes rigorous training, ensuring alignment with the company's culture and goals. X Plant-Based Meat Health Technology Co., Ltd., also boasts a rich portfolio of intellectual property, supported by a robust organizational culture emphasizing sincerity, dedication, and efficiency. Through its customer-centric approach, the company has forged enduring strategic partnerships, contributing to its sustained success. Additionally, it has developed comprehensive management systems, combining international best practices with internal expertise to support its growth trajectory.

(3) Sustainable strategies for X Plant-Based Meat Health Technology Co., Ltd.

X Plant-Based Meat Health Technology Co., Ltd. is employing a holistic approach to ensure sustainable growth and success in a competitive market. Central to its strategy is niche market penetration, targeting specific segments like the plant-based food premix market to offer specialized products. To facilitate this, the company focuses on organizational excellence, establishing clear structures, recruiting top talent,

and implementing robust incentives. Additionally, a channel expansion initiative is underway to broaden market reach by leveraging existing channels and optimizing the supply chain. Enhancing production capacity and technical expertise are key priorities, supported by strategies for production capacity enhancement and technical expertise development. Finally, market protection and innovation are emphasized through the establishment of entry barriers and continuous investment in research and development. These comprehensive strategies position the company for long-term success and growth in the plant-based food industry.

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